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EXAMINER	
OLSEN, KAJ K	

ART UNIT	PAPER NUMBER
1795	

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02/22/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Response to Amendment

1. In response to the amendment of 2/8/2010, claims 1, 3, 6, 8-16, 18, 21, and 23-34 would remain rejected over the prior art for the reasons discussed in the 10/8/2009 final rejection. In particular, the incorporation of claim 7 into claim 1; claim 22 into claim 16; and the incorporation of limitations analogous to claim 7 and 22 into claim 31 does not alter the grounds of rejection for the claims because both Say and Feldman already taught the limitations of claims 7 and 22 as discussed in par. 13 and 27 of the 10/8/2009 rejection.

2. The examiner would comment that applicant has not entirely incorporated claim 7 into claim 1 because claim 7 originally stated that the spacing did not exceed "*about* 200 micrometer" (emphasis added) whereas claim 1 now does not have the "about". Because claim 16 incorporated the "about", the examiner is not clear if the missing "about" in claim 1 was intentional or not. Claim 31 is similarly missing the "about".

Response to Arguments

3. Applicant's arguments filed 2/08/2010 have been fully considered but they are not persuasive. With respect to the rejection relying on either Mizutani or Saby, the examiner is not entirely clear what the precise argument is. It appears that applicant is urging that Mizutani and Saby make large electrodes when they incorporate hydrophilic polymer into the conductive ink (greater than 3 mm in diameter), the claimed distances of previous claims 7 and 22 would no longer have been obvious. If the examiner is interpreting this argument correctly, this is unpersuasive for two reasons. First, the examiner does not believe Mizutani and Saby are

utilizing such large electrodes *because* of the use of the polymer as the applicant has phrased the issue, but rather that Mizutani and Saby have large electrodes and that those large electrodes also include a hydrophilic polymer. In other words, the hydrophilic polymer does not appear to have anything to do with why Mizutani and Saby are utilizing such large electrodes. Because Say and Feldman have already established that large electrodes (like those of Mizutani and Saby) are not necessary for constructing a suitably performing glucose electrode, there is no reason that the incorporation of a hydrophilic polymer into that same electrode would suddenly require the use of much larger electrodes. Second, even if the examiner accepted applicant's assertion that the hydrophilic polymer would have required larger electrodes, it is unclear what bearing this would have with respect to amended claims 1, 16, and 31. In particular, electrode size and electrode spacing are two separate issues. One could have large electrodes closely spaced together or small electrodes a great distance from each other. A particular electrode size would having no bearing on the obviousness or unobviousness of the set forth electrode spacing.

4. With respect to the rejection relying on Charlton, the examiner has thoroughly dealt with the issues related to this teaching in the prior office actions (in particular, see the office action dated February 2, 2009). The examiner thanks applicant for providing the teaching of Skoog, but does not believe the teaching of Skoog is really relevant to the issues here because the use of Charlton here is drawn to the obviousness of incorporating a non-conductive polymer into a conductive electrode. Applicant urges that a hydrophilic polymer can be a conductive agent. Albeit correct that a hydrophilic polymer might be conductive, the particular polymer being relied on by Charlton (poly(ethylene oxide), which is more typically known as polyethylene glycol) is a non-conductive polymer. Hence this whole argument tangent that a hydrophilic

polymer could be conductive and might interfere with the electrode properties is irrelevant when the particular polymer being suggested by the secondary teaching of Charlton is already non-conductive.

5. Moreover, even if the polymer of Charlton (or other obvious hydrophilic polymer in the art) is conductive, this still wouldn't indicate that the polymers conductivity would interfere with appropriate sensor operation. In particular, what Skoog is addressing in that there is no way to absolutely predict electrode potentials. However, the potentials for the electrodes of Say or Feldman are not going to be governed by the conductive content of the electrodes *per se*, but rather by the choice of enzymes and mediator. See p. 34 of Saby (and equation 1 in particular) which shows that the half cell reaction being driven by the electrode is based on the enzyme and mediator oxidation and reduction potentials. See also sec. 3.2 of Saby where the electrode potentials for its electrodes appear to be a function primarily of the choice of mediator. The conductive material (e.g. carbon, platinum, etc) is not contributing to the actual electrochemical reaction, but is merely providing the electron flow for the electrochemical reactions. Hence, whether or not the hydrophilic polymer contributes to the electron flow or not has no bearing on the actual electrochemistry being probed by the sensors and would have little if any bearing on the electrode potentials.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KAJ K. OLSEN whose telephone number is (571)272-1344. The examiner can normally be reached on M-F 5:30-2:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Kaj K Olsen/
Primary Examiner, Art Unit 1795

February 18, 2010